No. 8300171

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Oklahoma Agricultural Experiment Station
and USDA-ARS

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BERMUDAGRASS

'Guymon'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 28th *day of* June *in the year of our Lord one thousand nine hundred and* eighty-five.

Attest:

Kenneth R. C...
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

John R Block
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO.0581-0055

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
Oklahoma Agricultural Experiment Station and USDA-ARS		Guymon

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*	5. PHONE *(Include area code)*
Oklahoma State University Stillwater, OK 74078	405/624-5398

FOR OFFICIAL USE ONLY

PVPO NUMBER: 8300171

FILING — DATE: 9/19/83; TIME: 2:30 ☐ A.M. ☒ P.M.

FEES RECEIVED — AMOUNT FOR FILING: $ 1,000; DATE: 9/19/83; AMOUNT FOR CERTIFICATE: $ 500.00; DATE: 4/26/85

6. GENUS AND SPECIES NAME	7. FAMILY NAME *(Botanical)*
Cynodon dactylon (L.) Pers var. dactylon	Graminae

8. KIND NAME	9. DATE OF DETERMINATION
Bermudagrass	(1) 1974 (2) Fall 1982

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*

State University & Federal Research

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. Paul Santelmann, Head
Department of Agronomy
Oklahoma State University
Stillwater, OK 74078

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☐ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☐ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☒ Foundation ☐ Registered ☒ Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? ☐ Yes *(If "Yes," give names of countries and dates)* ☒ No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes *(If "Yes," give names of countries and dates)* ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
Donald Johnson, Assoc Director, OK. Ag Exp Sta	9/7/83

SIGNATURE OF APPLICANT	DATE

NOTE: THERE HAS BEEN A CHANGE IN THE FEES.

INSTRUCTIONS

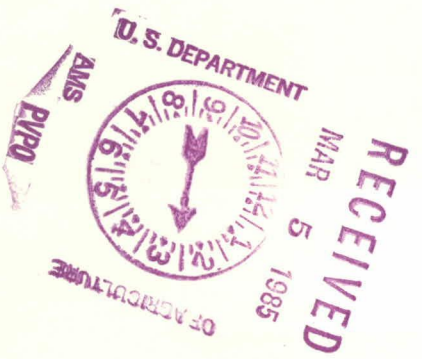
GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $1,000 fee ($500 filing fee and $500 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain, and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. [See section 180.175 of the Regulations and Rules of Practice (as amended November 8, 1982).] Retrain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item	
9	Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
14a	Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
14b	Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
14c	Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
14d	Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
15	If "Yes" is specified *(seed of this variety be sold by variety name only as a class of certified seed)* the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. *(See section 180.16 of the Regulations and Rules of Practice.)*
16	See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT A. ORIGIN AND BREEDING HISTORY OF 'GUYMON' BERMUDAGRASS.
Revised 26 February 1985

Guymon is a two-parental clone synthetic variety derived from the interpollination of the cross-compatible, self-incompatible clonal bermudagrass accessions 12156 and 9959 (PI 253302). Vegetative propagules of these two accessions constitute the Breeder stock and the Syn-1 and Syn-2 seed generations will serve as Foundation and Certified classes, respectively. The 12156 accession was collected near the town of Guymon in the Oklahoma Panhandle. Accession 9959 was introduced from Yugoslavia. Both belong to the taxon C. dactylon var. dactylon and have the tetraploid chromosome number $2n = 4x = 36$. Seed production of the 12156, 9959, and several other accessions was first evaluated in a small-plot experiment on the Agronomy Research Station, Stillwater, in early 1970's. In 1972, a seed production block (ca ½ ha) was established on the Southwestern Livestock and Forage Research Station, El Reno, by planting clonal propagules of the respective accessions in alternating rows spaced about 2m apart. Seed yields from this planting were measured during the years 1975, 1976 and 1977. Syn-1 generation seed from this planting was used to establish a small isolated block on the Southwestern Research Station, Tipton, Oklahoma, for advancement to the Syn-2 generation. The parental accessions and their Syn-1 and Syn-2 generation progenies have been evaluated for various characteristics in other tests at locations in Oklahoma, Kansas, and Arkansas.

Guymon is stable in its population mean characteristics in both the Syn-1 and Syn-2 generations. Progenies within the Syn-1 and Syn-2 generation populations are morphologically heterogeneous due to the heterozygosity of the parental plants; but no variant plants have been observed with abnormal phenotypic expressions outside the normal range of phenotypic variability. The progeny populations retain the cold tolerance of their parents and produce a winter hardy sod of acceptable quality for general turf and soil conservation use. The outstanding feature of Guymon relative to seeded common bermudagrass of Arizona origin (Arizona common) is its substantially greater winterhardiness. Arizona common, presently the predominant commercially available seeded bermudagrass, is subject to severe winter injury when grown north of about the 34th parallel. Guymon has been grown as far north as Manhattan, Kansas.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OF AGRICULTURE
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EXHIBIT B. NOVELTY STATEMENT FOR 'GUYMON' BERMUDAGRASS

To our knowledge, only three seed-propagated bermudagrass varieties have been commercially marketed in the U.S., namely: 1) 'NK-37', 2) "common" (variety not stated), and 3) Northrup King Brand 'Pasto Rico'. The NK-37 variety belongs to the taxon Cynodon dactylon var. aridus Harlan et de Wet. It is a diploid with 2n = 2x = 18 chromosomes and along with similar types of the same taxon is often referred to as "giant". The predominant seed-propagated bermudagrass currently commercially available is the 'common' type that is produced along the Colorado river in SW Arizona and SE California. It is a tetraploid (2n = 4x = 36 chromosomes) form of the taxon C. dactylon (L.) Pers. var. dactylon that has become naturalized to the relatively small geographic area in Arizona and California where it is produced. The Northrup-King Brand Pasto Rico is a mechnical blend of the common and NK-37 types.

The Guymon cultivar is distinctly different from the giant and common types as follows:

1. It is significantly more winterhardy than either type. When grown in the northern half of the geographic area of bermudagrass adaptation, there will be distinct difference between Guymon and the giant and common types in winter injury as manifested in date of initiation and extent of growth in early spring (Figure 1).

2. Guymon differs from the NK-37 cultivar (giant type) in chromosome number as indicated above.

3. Guymon has a darker green foliage color than does common.

4. The texture of Guymon is coarser than that of common by virtue of wider leaves (up to 6mm wide for Guymon; up to 4mm wide for common and larger stems (up to 3mm diameter for Guymon; up to 2mm diameter for common). Stems and leaf size of the two varieties can be compared in Figure 2. Also, the internodes of common develop a reddish to purplish color due to anthocyanin pigmentation (Fig. 3), whereas the internodes of Guymon develop little or no coloration.

5. The leaves of Guymon have significantly more pubescence on both the abaxial and adaxial surfaces than do the leaves of common.

6. The inflorescences of Guymon bear stouter racemes and larger florets and caryopses than do the inflorescences of common (Fig. 4). Seed size difference is reflected in data from replicated studies showing the number of Guymon seed/gram to equal 3265 as compared to 4629 common seeds/gram (See attached 1).

REVISED 1/24/85

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN AND SEED DIVISION

OBJECTIVE DESCRIPTION OF VARIETY
BERMUDAGRASS (Cynodon dactylon)

Name of Applicant(s)	Variety Name or Temporary Designation
OKLAHOMA AGRICULTURAL EXPERIMENT STATION AND USDA-ARS	'Guymon'
Address (Street and No. or R.F.D. No., City, & Zip Code Dr. P. W. Santelmann Agronomy Department Oklahoma State University Stillwater, OK 74078	FOR OFFICIAL USE ONLY PVPO Number 8300171

Place the appropriate number that describes the varietal character of this variety in the boxes below. Fill unused columns with zeros (e.g. [0|9|9] when number is 99). The value [0|0] should only be used to indicate that the varieties are equal. The symbol Δ indicates a decimal point. Characteristics described, including numerical measurements, should represent those which are TYPICAL for the variety. Measured data should be for unclipped spaced plants in plots, or in individual pots if greenhouse-grown. Comparisons to standard varieties must be made under the same conditions. Give location of test area El Reno & Stillwater, OK.

COMPARISON VARIETIES FOR USE BELOW
1 = Common (seed propagated--Arizona or California origin) 2 = NK-37
3 = Greenfield

1. SPECIES:

[1] 1 = C. dactylon var. dactylon 2 = C. dactylon var aridus

3 = Other (specify) C. _____.

2. CYTOLOGY:

[3|6] 2n Chromosome Number

[2] Ploidy 1 = diploid 2 = tetraploid

3. ADAPTATION: (0 = Not Tested 1 = Inadequately Tested 2 = Not Adapted 3 = Adapted)

[0] Northwest	[0] North Central	[0] Northeast
[1] West Central	[3] Central	[3] East Central
[1] Southwest	[3] South Central	[1] Southeast

4. RHIZOMES:

[4] 1 = None (Coastcross-1) 2 = Weakly Rhizomatous (Coastal)
3 = Moderately Rhizomatous (Midland) 4 = Heavily Rhizomatous (Greenfield)

5. STOLONS AND SHOOTS:

[2] Anthocyanin Pigmentation (cool temperatures)
1 = present (Common, Hardie)
2 = absent (Midland)

[0][3] mm maximum internode diameter

[ ][ ] mm less in maximum diameter than [ ] standard variety.

[0][1] mm more in maximum diameter than [1] standard variety.

6. LEAF BLADE:

[2] Color: 1 = Light Green (Bayshore, Seeded Common)
2 = Medium Dark Green (Everglades, Tifway)
3 = Dark Green (Tifgreen, Sunturf)
4 = Dark Bluegreen (Tifdwarf, No Mow)

[4] Width class
1 = Fine (Tifdwarf, Tifgreen, Sunturf)
2 = Medium (Tifway, Texturf 1F)
3 = Medium Coarse (Midiron, Seeded Common)
4 = Coarse (Midland, Hardie)
5 = Very Coarse (Coastcross-1, Brazos)

[0][6] mm width (3rd or 4th below apical meristem)

[ ][ ] mm narrower than [ ][ ]
Blade length same as [0][3]
[0][2] mm wider than .. [0][1]
} Comparison variety

[3] Pubescence (adaxial surface)
[3] pubescence (abaxial surface)
} 1 = glabrous
2 = sparse (common)
3 = copious

7. SEED (Naked Caryopses):

3265	Number of seeds per gm	
1364	Number of seeds per gm less than....	01
	Seed weight same as.....	Comparison variety
	Number of seeds per gm more than....	

8. LOW TEMPERATURE TOLERANCE (Winterhardiness):

4

1 = Low (Coastcross-1) 2 = Moderately Low (Coastal, Brazos)
3 = Moderately High (Tifway, Tifdwarf) 4 = High (Midland, Midiron)

9. DISEASES AND INSECTS: (0 - Not tested, 1 = Susceptible, 2 = Resistant)

0	Brown Patch, Rhizoctonia solani
0	Dollar Spot, Sclerotinia homeocarpa
0	Fading Out, Curvularia spp.
0	Melting-Out, Helminthosporium spp.
0	Spring Dead Spot, (Pathogen indefinite)

10. INDICATE THE SEED PROPAGATED VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR THE FOLLOWING CHARACTERS: For each of the following characters, indicate the degree of resemblance by placing in the column marked "D.R." one of the following numbers.
1 = Application variety is less than comparison variety.
2 = Same as.
3 = More than, better, greater, darker, etc.

CHARACTER	VARIETY	D.R.
Rate of Spread	Common	1
Sod Density	Common	1
Color	Common	3
Cold Tolerance	Common	3